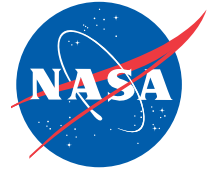




National Aeronautics and Space Administration



NASA's Impact in South Carolina: A Tech Transfer Perspective

You know that NASA studies our planet, our sun, the solar system, and the Universe.
But did you know about the space program's economic impact here on Earth?



In 2011, NASA invested nearly **\$2 million** in the state of South Carolina.

Since 2001, NASA's SBIR/STTR Program has invested
\$240,000 in **South Carolina** and more than **\$1.2 billion** nationwide.

How NASA's SBIR/STTR Program Benefits South Carolina

NASA is committed to moving technologies and innovations into the mainstream of the U.S. economy, and the Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) program helps fulfill this goal.

SBIR/STTR stimulates technological innovation by encouraging small, high-tech companies—particularly minority and disadvantaged businesses—to partner with NASA to help meet its research and development needs in key technology areas. At the same time, this program strengthens small companies by enabling them to bring cutting-edge new products into the U.S. economy.

The list to the right highlights a South Carolina business that received an SBIR/STTR contract from NASA. (Visit <http://sbir.nasa.gov> for more information on the SBIR/STTR program.)

NASA SBIR/STTR Company in South Carolina

Sensor Electronic Technology, Inc.Columbia



www.nasa.gov





How NASA Spinoffs Benefit South Carolina



3-D Image Measurement System Detects Structural Failures Before They Occur (Columbia)

NASA and the University of South Carolina collaboratively developed the first method capable of detecting in-flight structural failures before they occur. The three-dimensional (3-D) image measurement system offered robust, accurate, and effective methods for assessing the strength of thin warping structures. Later NASA licensed the technology to Correlated Solutions, Inc. (CSI) who improved and marketed the technology. CSI's system consists of two digital cameras, a computer-based image acquisition and analysis system, and software to convert the images and provide options for viewing and displaying the data. Applications include aircraft fuselage and wing analysis, rubber tire analysis, biomedical research, and crash testing. Recently the technology has also been used to characterize bioengineered and nano materials.



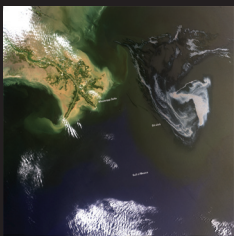
Wearout-Free Aluminum Electrolytic Capacitors (Liberty)

Cornell Dubilier Electronics, Inc. designed, developed, and marketed capacitors as a result of a NASA contract. NASA wanted a space-rated, lightweight, high-energy density capacitor to exceed the performance attainable with capacitors previously used for space applications. Cornell Dubilier's design used nongassing electrolytes that exhibited no wearout from electrolytic depletion. The company's aluminum electrolytic capacitor is hermetically sealed with a weld-seal technology, uses low gassing electrolytes, and has an operating lifetime of between 50 and 100 years. Cornell Dubilier's capacitor was used in a ground-to-satellite phone system as a battery stiffening capacitor in a hand-held phone, delivering high-peak current needed to transmit to the orbiting satellites.



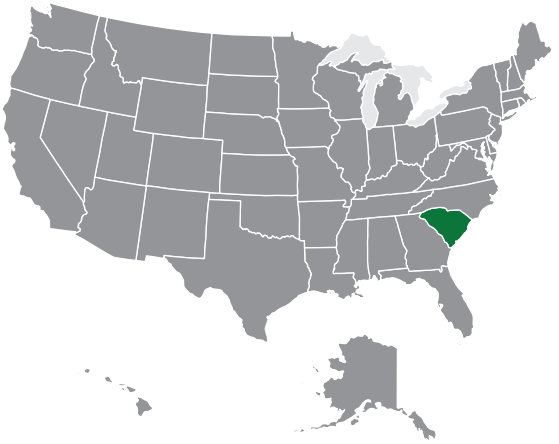
Water Purification (Hilton Head)

NASA developed a small, lightweight water purifier requiring minimal power and no monitoring to supply astronauts with pure drinking water on space missions. These units, which disperse silver ions to rapidly eliminate bacteria, were used on the Apollo spacecraft. NASA issued several licenses for this technology, including one to Clearwater Pool Technologies (now Caribbean Clear USA, Inc.). Their chlorine-free system consists of a microcomputer, a pair of metallic electrodes, and a rheostat controller. Units are distributed throughout a tank or pool and the silver ions kill bacteria while the copper ions kill algae. Caribbean Clear produces systems for spas, hot tubs, water recycling systems, ponds, marine animal tanks, and hospitals.



NASA Helps Officials Assess Damage from Oil Spills (Columbia)

NASA's Earth Observation Commercialization Applications Program (EOCAP) provided funding to encourage analysis of NASA's voluminous data on Earth and ocean resources. Research Planning, Inc. (RPI), in cooperation with NASA and the University of South Carolina, developed advanced techniques for mapping oil spills to help pinpoint specific threats to the environment. RPI developed a method for providing decision makers with timely, highly accurate, readily updatable and comprehensive maps that incorporated satellite remote sensing and geographic information system (GIS) technologies. The company's product provided critical information to military and civilian officials involved in assessing the damage potential of oil slicks. The product also helps officials identify the natural and socioeconomic resources threatened by a spill.



NASA actively seeks partnerships with U.S. companies that can license NASA innovations and create "spinoffs" in areas such as health and medicine, consumer goods, transportation, renewable energy, and manufacturing. When businesses leverage NASA technologies to develop new products, it not only benefits the regional economy, but significantly strengthens the nation's competitiveness in the global marketplace.

NASA's centers across the country have helped 9 South Carolina companies develop revolutionary spinoff technologies.

Learn more about how NASA innovations benefit the public in *Spinoff*, an annual publication that highlights NASA's most significant technology transfer successes. (Available at: <http://www.sti.nasa.gov/tto>)

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Publication herein does not constitute NASA endorsement of the product or process, nor confirmation of manufacturer's performance claims related to any particular spinoff development.